

REMARKS

Claims 1-9 and 11-24 are pending. The Examiner's reconsideration of the rejections is requested in view of the amendments and remarks.

Claims 1, 9, and 14 are the independent claims.

Claim 1 has been rejected under 35 U.S.C. 102(e) as being anticipated by Makinouchi et al. (US 5,677,754). The Examiner stated essentially that Makinouchi teaches all the limitations of Claim 1.

Claim 1 claims, "disposing a mask including a pattern shape over the layer formed on a substrate; and scanning the mask with the light, such that a direction of the scanning is substantially perpendicular to a longitudinal direction of the pattern shape to form a pattern."

Makinouchi teaches an illumination field 21/22 having a rectangular shape due to a fixed field stop 5, wherein the illumination field 21/22 is scanned over a reticle R having a rectangular shape (see FIGS. 2(a) and 3). Makinouchi does not teach "disposing a mask including a pattern shape over the layer formed on a substrate; and scanning the mask with the light, such that a direction of the scanning is substantially perpendicular to a longitudinal direction of the pattern shape to form a pattern" as claimed in Claim 1. Makinouchi teaches an apparatus and a method of use of the apparatus; Makinouchi fails to explicitly teach a pattern shape formed by the apparatus and method. Thus, Makinouchi does not teach the scanning of light using the apparatus "perpendicular to a longitudinal direction of the pattern shape." For example, Makinouchi teaches only the scanning relative to the reticle R and substrate W, but fails to teach a pattern shape formed by the reticle R on the substrate W. Therefore, Makinouchi fails to teach all the limitations of Claim 1.

Therefore, Makinouchi fails to teach all the limitations of Claim 1. The Examiner's reconsideration of the rejection is respectfully requested.

Claims 2-4 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Makinouchi in view of Isobe et al. (U.S. Patent Application No. 2003/0218169). The Examiner stated essentially that the combined teachings of Makinouchi and Isobe teach or suggest all the limitations of Claims 2-4.

Claims 2-4 depend from Claim 1. The dependent claims are believed to be allowable for at least the reasons given for Claim 1.

Claims 5, 6, and 8 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Makinouchi in view of Isobe, and further in view of Kim (U.S. Patent Application No. 2003/0211404). The Examiner stated essentially that the combined teachings of Makinouchi, Isobe and Kim teach or suggest all the limitations of Claims 5, 6, and 8.

Claims 5, 6, and 8 depend from Claim 1. The dependent claims are believed to be allowable for at least the reasons given for Claim 1. Reconsideration of the rejection is respectfully requested.

Claim 7 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Makinouchi in view of Isobe and further in view of Tanuma et al. (USPN 5,718,839). The Examiner stated essentially that the combined teachings of Makinouchi, Isobe and Tanuma teach or suggest all the limitations of Claim 7.

Claim 7 depends from Claim 1. Claim 7 is believed to be allowable for at least the reasons given for Claim 1. Reconsideration of the rejection is respectfully requested.

Claims 9, 14, 15, 19, and 21 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (U.S. Patent Application No. 2003/0213966) in view of Makinouchi. The Examiner stated essentially that the combined teachings of Yang and Makinouchi teach of suggest all the limitations of Claims 9, 10, 14, 15, and 19.

Claim 9 claims, *inter alia*, “disposing a mask including a pattern shape over the photoresist layer formed on the substrate; scanning the mask with a light, such that a direction of the scanning is substantially perpendicular to a longitudinal direction of the pattern shape of the mask to expose the photoresist layer.” Claim 14 claims, *inter alia*, “forming a photosensitive layer pattern by scanning with a light through a mask, wherein a direction of scanning is substantially perpendicular to a longitudinal direction of a data line to be formed during an exposure process, and the photosensitive layer pattern includes a first portion, a second portion thicker than the first portion, and a third portion thinner than the first portion.”

Yang teaches a process for vapor depositing a low dielectric insulating film (see Abstract). As noted in the Office Action, Yang does not disclose scanning substantially perpendicular to a longitudinal direction of the pattern shape to expose the photoresist layer. Nowhere does Yang teach or suggest “scanning the mask with a light, such that a direction of the scanning is substantially perpendicular to a longitudinal direction of the pattern shape of the mask to expose the photoresist layer” as claimed in Claim 9, nor “forming a photosensitive layer pattern by scanning with a light through a mask, wherein a direction of scanning is substantially perpendicular to a longitudinal direction of a data line to be formed

“during an exposure process” as claimed in Claim 14. Therefore, Yang fails to teach or suggest all the limitations of Claims 9 and 14.

Makinouchi teaches an illumination field 21/22 having a rectangular shape due to a fixed field stop 5, wherein the illumination field 21/22 is scanned over a reticle R having a rectangular shape (see FIGS. 2(a) and 3). Makinouchi does not teach “direction of the scanning is substantially perpendicular to a longitudinal direction of the pattern shape” as claimed in Claim 9 and essentially as claimed in Claim 14. Makinouchi fails to explicitly teach a pattern shape, much less the scanning of light using the apparatus “perpendicular to a longitudinal direction of the pattern shape.” For example, Makinouchi teaches only the scanning relative to the reticle R and substrate W, but fails to teach a pattern shape formed by the reticle R on the substrate W. Therefore, Makinouchi fails to cure the deficiencies of Yang.

The combined teachings of Yang and Makinouchi teach a method for scanning light over a reticle without regards to a pattern shape formed on the reticle. The combined teachings of Yang and Makinouchi fail to teach or suggest “scanning the mask with a light, such that a direction of the scanning is substantially perpendicular to a longitudinal direction of the pattern shape of the mask to expose the photoresist layer” as claimed in Claim 9, nor “forming a photosensitive layer pattern by scanning with a light through a mask, wherein a direction of scanning is substantially perpendicular to a longitudinal direction of a data line to be formed during an exposure process” as claimed in Claim 14. Therefore, the combined teachings of Yang and Makinouchi fail to teach or suggest all the limitations of Claims 9 and 14.

Claims 15 and 19 depend from Claim 14. The dependent claims are believed to be allowable for at least the reasons given for Claim 14. Claim 10 has been cancelled. Reconsideration of the rejection is respectfully requested.

Claims 11, 12, 16, and 24 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Yang in view of Makinouchi and further in view of Tanuma. The Examiner stated essentially that the combined teachings of Yang, Makinouchi, and Tanuma teach of suggest all the limitations of Claims 11 and 16.

Claims 11, 12 and 24 depend from Claim 9. Claim 16 depends from Claim 14. The dependent claims are believed to be allowable for at least the reasons given for Claims 9 and 14. Reconsideration of the rejection is respectfully requested.

Claims 13, 17, 18, 20, 22, and 23 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Yang in view of Makinouchi and further in view of Kim. The Examiner stated essentially that the combined teachings of Yang, Makinouchi, and Kim teach of suggest all the limitations of Claims 13, 17, and 18.

Claims 13, 20, 22, and 23 depend from Claim 9. Claims 17 and 18 depend from Claim 14. The dependent claims are believed to be allowable for at least the reasons given for Claims 9 and 14. At least Claim 13 is believed to be allowable for additional reasons.

Claim 13 claims, that “one cell is exposed by the mask and forming the protection layer comprises patterning the protection layer using a second mask simultaneously exposing two cells, wherein the mask is smaller than the second mask.”

The combined teachings of Yang, Makinouchi, and Kim fail to teach or suggest masks of different sizes, much less that a mask having a smaller size is used to form a data line, essentially as claimed in Claim 13.

Reconsideration of the rejection is respectfully requested.

For the forgoing reasons, the present application, including Claims 1-9 and 11-24, is believed to be in condition for allowance. The Examiner's early and favorable action is respectfully urged.

Respectfully submitted,

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